

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1 (currently amended): A method of depositing a nanostructure-containing material onto a substrate, the method comprising:

(i) forming a suspension of pre-formed nanostructure-containing material in a liquid medium, the nanostructure-containing material comprising at least one of nanotubes and nanowires;

(ii) selectively adding a charger to the liquid medium;

(iii) immersing electrodes in the suspension, wherein at least one of the electrodes comprises the substrate; and

(iv) applying a direct or alternating current to the immersed electrodes thereby creating an electrical field between the electrodes;

~~whereby~~ wherein the nanostructure-containing material is caused to migrate toward, and attach to, the substrate.

Claim 2 (currently amended): The method of claim 1, wherein the nanostructure-containing material comprises ~~at least one of~~ carbon nanotubes, ~~nanowires and nanoparticles.~~

Claim 3 (currently amended): The method of claim 2, wherein the carbon nanotubes ~~comprising~~ comprise at least one of ~~the following elements: carbon, boron~~ [[,]] and nitrogen, ~~oxygen.~~

Claim 4 (currently amended): The method of claim ~~[[2]]~~ 1, wherein the nanowires ~~comprising~~ comprise at least one of the following: silicon, germanium, elemental metal, oxide, carbide, nitride, or chalcogenide.

Claim 5 (canceled).

Claim 6 (original): The method of claim 1, wherein the nanostructure-containing material comprises at least one of single-walled and multi-walled carbon nanotubes.

Claim 7 (canceled).

Claim 8 (currently amended): The method of claim ~~[[3]]~~ 6, wherein the at least one of single-walled and multi-walled carbon nanotubes are pre-formed by laser ablation, arc-discharge, or chemical vapor deposition.

Claim 9 (original): The method of claim 1, wherein the pre-formed nanostructure-containing material comprises single-walled carbon nanotubes, and the method further comprises shortening the pre-formed single-walled carbon nanotubes by chemical reaction or mechanical processing prior to their introduction into the suspension.

Claim 10 (original): The method of claim 9, wherein the method further comprises annealing the pre-formed nanotubes at 100°C - 1200°C in a vacuum prior to their introduction into the suspension.

Claim 11 (original): The method of claim 9, wherein the length of the carbon nanotubes is in the range of 0.1-100 micrometers.

Claim 12 (original): The method of claim 1, wherein the liquid medium comprises at least one of water, alcohol, or dimethylformamide.

Claim 13 (original): The method of claim 1, wherein step (i) further comprises either application of ultrasonic energy or stirring thereby facilitating the formation of a stable suspension

Claim 14 (original): The method of claim 1, wherein the charger comprises at least one of magnesium chloride, $\text{Mg}(\text{NO}_3)_2$, $\text{La}(\text{NO}_3)_3$, $\text{Y}(\text{NO}_3)_3$, AlCl_3 , and sodium hydroxide.

Claim 15 (original): The method of claim 14, wherein the concentration of the charger is on the order of less than 1% by weight.

Claim 16 (original): The method of claim 1, wherein the substrate comprises an electrically conductive material.

Claim 17 (currently amended): The method of claim 1 wherein the liquid medium comprises alcohol, and the nanostructure-containing material comprises single-walled carbon nanotubes, and step (i) further comprises forming [[a]] the suspension having a concentration of 0.1-1.0 mg/mL, expressed as mg of single-walled carbon nanotubes per ml of liquid medium.

Claim 18 (original): The method of claim 1, wherein step (iv) comprises applying direct current to the electrodes.

Claim 19 (currently amended): The method of claim 18, wherein the electrical field applied between the two electrodes is in the range of 0.1 - 1000V/cm and the direct current is in the range of 0.1 [[B]] - 200mA/cm².

Claim 20 (currently amended): The method of claim 18, wherein step (iv) further comprises applying direct current to the electrodes for a time period of 1 second [[B]] to 1 hour.

Claim 21 (original): The method of claim 18, wherein step (iv) comprises creating an electrical field between the electrodes of at least 20V/cm in intensity.

Claim 22 (original): The method of claim 1, further comprising the steps of:
(v) removing the electrodes from the suspension; and

(vi) annealing the coated substrate.

Claim 23 (original): The method of claim 22, wherein step (vi) comprises a two-step anneal, comprising heating the coated substrate to a first temperature for a selected period of time, then heating the coated electrode to a second temperature for a selected period of time.

Claim 24 (currently amended): The method of claim 1, wherein step (i) further comprises adding additional materials into the suspension of pre-formed nanostructure-containing material ~~containing nanostructures~~.

Claim 25 (currently amended): The method of claim 24, wherein the additional materials comprise at least one binder material, wherein the binder is present in an amount ranging from 0.1-20 weight% of the nanostructure-containing material ~~materials~~.

Claim 26 (original): The method of claim 25, wherein the binder is at least one of poly(vinyl butyral-co vinyl alcohol-co-vinyl acetate) and poly(vinylidene fluoride).

Claim 27 (original): The method of claim 24, wherein the additional materials comprise small particles of at least one of: iron; titanium; lead; tin; or cobalt; and wherein the particles have a diameter less than 1 micrometer.

Claim 28 (original): The method of claim 1, wherein step (iii) further comprises pre-coating at least one adhesion promoting layer onto the substrate prior to coating with the nanostructure-containing materials.

Claim 29 (original): The method of claim 28, wherein the adhesion-promoting layer comprises at least one of: iron; titanium; cobalt; nickel; tantalum; tungsten; niobium; zirconium; vanadium; chromium; and hafnium.

Claims 30-65 (canceled).

Claim 66 (currently amended): The method of claim 1, comprising depositing ~~a pattern of nanostructure-containing material onto the substrate, the method further comprising:~~

providing the substrate with a first surface having a mask disposed thereon, the mask having openings through which areas of the first surface are exposed;

immersing the at least one electrode and the masked substrate in the suspension;

applying the direct or alternating current to the electrode and the masked substrate thereby creating an electrical field therebetween;

~~whereby the nanostructure-containing material is being~~ caused to migrate toward, and attach to, those exposed areas on the first surface of the substrate; and removing the mask;

wherein a pattern of nanostructure-containing material is deposited onto the substrate.

Claim 67 (original): The method of claim 66, wherein the nanostructure-containing material comprises single-walled carbon nanotubes.

Claim 68 (original): The method of claim 66, wherein the pre-formed nanostructure-containing material comprises single-walled carbon nanotubes, and the method further comprises shortening the pre-formed single-walled carbon nanotubes by chemical reaction or mechanical processing prior to their introduction into the suspension.

Claim 69 (original): The method of claim 66, wherein the liquid medium comprises at least one of water, alcohol, or dimethylformamide.

Claim 70 (currently amended): The method of claim 66, wherein the electrical field applied between the two electrodes is in the range of 0.1 - 1000V/cm and the direct current is in the range of 0.1 $[[B]]$ - 200mA/cm².

Claim 71 (currently amended): The method of claim 66, ~~wherein step (i)~~
~~comprises~~ comprising:

adding additional materials into the suspension, the additional materials
~~comprise~~ comprising at least one binder material, wherein the binder is present in an
amount ranging from 0.1-20 weight% of the nanostructure-containing materials.

Claim 72 (original): The method of claim 71, wherein the binder is at least
one of poly(vinyl butyral-co vinyl alcohol-co-vinyl acetate) and poly(vinylidene
fluoride).

Claim 73 (original): The method of claim 71, wherein the additional materials
comprise small particles of at least one of: iron; titanium; lead; tin; or cobalt; and
wherein the particles have a diameter less than 1 micrometer.

Claim 74 (new): A method of depositing a nanostructure-containing material
onto a substrate, the method comprising:

forming a suspension of pre-formed nanostructure-containing material in a
liquid medium, the nanostructure-containing material comprising at least one of
nanotubes and nanowires;

adding small particles to the suspension to promote adhesion of the
nanostructure-containing material to the substrate;

selectively adding a charger to the liquid medium;

immersing electrodes in the suspension, wherein at least one of the
electrodes comprises the substrate; and

applying a direct or alternating current to the immersed electrodes thereby
creating an electrical field between the electrodes;

wherein the nanostructure-containing material is caused to migrate toward,
and attach to, the substrate.